CLAIMS

1. A self-lubricating connector, selected from the group consisting of bearings, bushings, rollers and gears, comprising:

a tubular insert having an outer substrate and an inner load bearing layer bonded thereto;

a member integrally engaged with the outer substrate and extending circumferentially about the tube;

the load bearing layer including a lubricious plastic material selected from the group consisting of fluoropolymers, polyimide and aromatic ketones, and combinations thereof.

2. The self-lubricating connector of claim 1, wherein:

the tubular insert is disposed in concentric, in-situ-molded relationship with the molded member; and

the member is fabricated from a polymeric material.

3. The self-lubricating connector of claim 1, wherein the member is formed by molding member material onto the outer substrate.

4. The self-lubricating connector of claim 1, wherein the member is formed by injection molding.

5. The self-lubricating connector of claim 1, wherein the tubular insert further comprises a bonding layer between the load bearing layer and the substantially planar surface of the substrate.

6. The self-lubricating connector of claim 1, wherein said member is fabricated from a material selected from the group consisting of:

fluoropolymers, acetal, polycarbonate, polyimides, polyetherimide, polyetherketone (PEEK), polyethylene, polypropylene, polysulfones (e.g., polyethersulfone), polyamide (Nylon), polyphenylene sulfide, polyurethane, polyester, polyphenylene oxide, and blends and alloys thereof.

7. The self-lubricating connector of claim 1, wherein the member has a substantially cylindrical surface, the tubular insert is substantially cylindrical, and the substrate is disposed in surface to surface engagement with the substantially cylindrical surface of the member.

8. The self-lubricating connector of claim 7, wherein said cylindrical surface comprises an inner diameter of said member, and said connector layer is disposed on an inner surface of said substrate.

9. The self-lubricating connector of claim 8, wherein said member further comprises an outer surface, said outer surface being substantially cylindrical and disposed concentrically with said cylindrical surface.

10. The self-lubricating connector of claim 9, wherein the member comprises a wheel.

11. The self-lubricating connector as set forth in claim 1, wherein the substrate is fabricated from a metallic material.

12. The connector as set forth in claim 11, wherein said substrate is fabricated from steel.

13. The connector as set forth in claim 11, wherein said substrate is fabricated from aluminum.

14. The connector as set forth in claim 1, wherein said load bearing layer further comprises at least one filler selected from the group consisting of carbon, graphite, aluminum oxide, silicon carbide, boron nitride, silicon nitride, glass, bronze, fluoropolymer, silicone, molybdenum disulfide, and combinations thereof.

15. The connector as set forth in claim 1, wherein said member is fabricated from a metallic material.

16. The connector as set forth in claim 1, wherein said load bearing layer and said adhesive are fabricated as a monolayer comprising a polymer blend.

17. The connector as set forth in claim 16, wherein said monolayer comprises PFA and PTFE.

18. The connector as set forth in claim 17, wherein said monolayer is alternately produced by melt extrusion if PFA is predominant and by sheet skiving if PTFE is predominant.

19. The self-lubricating connector of claim 1, wherein the member further comprises a peripheral engagement surface adapted for engagement with another component.

20. The self-lubricating fastener of claim 19, wherein said peripheral engagement surface is substantially cylindrical and is adapted for rolling engagement with said other component.

21. A method of fabricating a self-lubricating connector comprising the steps of:

(a) providing a substantially planar substrate;

(b) fastening a load bearing layer of lubricious material onto the substrate with an adhesive film;

(c) applying heat and pressure to the load bearing layer, to cause the adhesive film to bond the load bearing layer to the substrate;

(d) forming the substantially planar surface of the substrate into a tube the load bearing layer disposed on an inner surface thereof;

(e) molding a member from a polymeric material; and

(f) disposing the substrate in surface to surface engagement with an inner tubular surface of a member, wherein the member extends circumferentially about the tube to form the self-lubricating connector.

22. The self-lubricating connector of claim 1, wherein the substrate and member are configured for mutual press-fitting or snap-fitting.

23. A self-lubricating roller bearing comprising:

a cylindrical insert having a substrate and a load bearing layer bonded to an inner surface of the insert;

the insert being formed by the process of applying the load bearing layer to a substantially planar surface of the substrate, applying heat and pressure thereto to make a laminate and forming the laminate into a tubular cylinder having an inner load bearing layer; and

a member integrally engaged with the substrate to extend circumferentially about the tubular cylinder;

the member being fabricated from a polymeric material;

the member having a peripheral cylindrical engagement surface adapted for rolling engagement with a component, wherein the self-lubricating roller bearing is adapted for simultaneous movable engagement with at least two discrete components.

24. A roller with self-lubricating bearing, comprising:

a tubular insert, having;

an outer substrate; and

an inner load bearing layer bonded thereto;

a molded, polymeric roller;

the tubular insert disposed in concentric, in-situ-molded relationship with the molded, polymeric roller; and

the roller extending circumferentially about the tube.